

**Patent claims**

1. A method for regulating the operating frequency of a fiber-optic gyroscope (FOG) with a closed control  
5 loop, in which the demodulated output signal of the FOG detector, as actual signal, is applied on the one hand to the input of an FOG main controller and on the other hand, via a gating filter, to a VCO that determines the system clock of the FOG, the output signal of the main  
10 controller, as modulation signal, being fed to a digital phase modulator formed in a multifunctional integrated optical chip (MIOC), and, for the purpose of determining and regulating the exact operating frequency of the FOG, a periodic additional modulation  
15 signal is superposed on the demodulated detector output signal passing to the gating filter, **characterized** in that the additional modulation signal, as analog signal, is fed to separate phase correction electrodes formed in the MIOC.

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2. A multifunctional integrated optical chip (MIOC 11) for a fiber-optic gyroscope (FOG 100), in which a phase modulator (21) realized by electrodes arranged parallel to a light guiding path is  
25 implemented as at least one functional group, **characterized** in that, in addition to the phase modulator, an electrode pair (25) arranged parallel to the light guiding path is present for applying a periodic additional modulation signal ( $\delta E$ ) to a light  
30 beam on the light guiding path for the purpose of regulating the operation frequency of the gyroscope.

3. The integrated optical chip as claimed in claim 2, **characterized** in that the additional electrode pair is  
35 arranged between the phase modulator and a beam splitter (23).